



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/667,235	09/22/2000	David M. Baggett	1956.0010000/PEG	1340

26111 7590 10/28/2004

STERNE, KESSLER, GOLDSTEIN & FOX PLLC  
1100 NEW YORK AVENUE, N.W.  
WASHINGTON, DC 20005

EXAMINER
----------

WOO, RICHARD SUKYOON

ART UNIT	PAPER NUMBER
----------	--------------

3629

DATE MAILED: 10/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/667,235

Applicant(s)

BAGGETT ET AL.

Examiner

Richard Woo

Art Unit

3629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 23 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-64 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-64 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Arguments***

- 1) The Applicant's amendment filed July 23, 2004 has been acknowledged and entered.
- 2) Applicant's arguments filed July 23, 2004 have been fully considered but they are not persuasive.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., to determine between providing cached availability information or real time availability information to the requestor) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Additionally, even if the applicant asserts that Demarcken fails to disclose the step of provide at least one of real time information and cached information to the requestor, DeMarcken rather suggests or teaches determining on the basis of direct available queries (page 21, line 17) – i.e. real time information; and determining by using historical data (see Fig. 11, page 21, line 32) – i.e. cached information (see also Fig. 5 the store (106) for caching information).

- 3) The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

***Claim Rejections - 35 USC § 101***

4) 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5) Claims 1-63 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

As an initial matter, the United States Constitution under Art. I, §8, cl. 8 gave Congress the power to "[p]romote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries". In carrying out this power, Congress authorized under 35 U.S.C. §101 a grant of a patent to "[w]hoever invents or discovers any new and useful process, machine, manufacture, or composition or matter, or any new and useful improvement thereof." Therefore, a fundamental premise is that a patent is a statutorily created vehicle for Congress to confer an exclusive right to the inventors for "inventions" that promote the progress of "science and the useful arts". The phrase "technological arts" has been created and used by the courts to offer another view of the term "useful arts". See *In re Musgrave*, 167 USPQ (BNA) 280 (CCPA 1970). Hence, the first test of whether an invention is eligible for a patent is to determine if the invention is within the "technological arts".

Further, despite the express language of §101, several judicially created exceptions have been established to exclude certain subject matter as being patentable subject matter covered by §101. These exceptions include "laws of nature", "natural phenomena", and "abstract ideas". See *Diamond v. Diehr*, 450, U.S. 175, 185, 209

Art Unit: 3629

USPQ (BNA) 1, 7 (1981). However, courts have found that even if an invention incorporates abstract ideas, such as mathematical algorithms, the invention may nevertheless be statutory subject matter if the invention as a whole produces a "useful, concrete and tangible result." See *State Street Bank & Trust Co. v. Signature Financial Group, Inc.* 149 F.3d 1368, 1973, 47 USPQ2d (BNA) 1596 (Fed. Cir. 1998).

This "two prong" test was evident when the Court of Customs and Patent Appeals (CCPA) decided an appeal from the Board of Patent Appeals and Interferences (BPAI). See *In re Toma*, 197 USPQ (BNA) 852 (CCPA 1978). In *Toma*, the court held that the recited mathematical algorithm did not render the claim as a whole non-statutory using the Freeman-Walter-Abele test as applied to *Gottschalk v. Benson*, 409 U.S. 63, 175 USPQ (BNA) 673 (1972). Additionally, the court decided separately on the issue of the "technological arts". The court developed a "technological arts" analysis:

The "technological" or "useful" arts inquiry must focus on whether the claimed subject matter...is statutory, not on whether the product of the claimed subject matter...is statutory, not on whether the prior art which the claimed subject matter purports to replace...is statutory, and not on whether the claimed subject matter is presently perceived to be an improvement over the prior art, e.g., whether it "enhances" the operation of a machine. *In re Toma* at 857.

In *Toma*, the claimed invention was a computer program for translating a source human language (e.g., Russian) into a target human language (e.g., English). The court found that the claimed computer implemented process was within the "technological art"

because the claimed invention was an operation being performed by a computer within a computer.

The decision in *State Street Bank & Trust Co. v. Signature Financial Group, Inc.* never addressed this prong of the test. In *State Street Bank & Trust Co.*, the court found that the "mathematical exception" using the Freeman-Walter-Abele test has little, if any, application to determining the presence of statutory subject matter but rather, statutory subject matter should be based on whether the operation produces a "useful, concrete and tangible result". See *State Street Bank & Trust Co.* at 1374. Furthermore, the court found that there was no "business method exception" since the court decisions that purported to create such exceptions were based on novelty or lack of enablement issues and not on statutory grounds. Therefore, the court held that "[w]hether the patent's claims are too broad to be patentable is not to be judged under §101, but rather under §§102, 103 and 112." See *State Street Bank & Trust Co.* at 1377. Both of these analysis goes towards whether the claimed invention is non-statutory because of the presence of an abstract idea. Indeed, *State Street* abolished the Freeman-Walter-Abele test used in *Toma*. However, *State Street* never addressed the second part of the analysis, i.e., the "technological arts" test established in *Toma* because the invention in *State Street* (i.e., a computerized system for determining the year-end income, expense, and capital gain or loss for the portfolio) was already determined to be within the technological arts under the *Toma* test. This dichotomy has been recently acknowledged by the Board of Patent Appeals and Interferences (BPAI) in affirming a

§101 rejection finding the claimed invention to be non-statutory. See *Ex parte Bowman*, 61 USPQ2d (BNA) 1669 (BdPatApp&Int 2001).

In the present application, there is no significant change in the data or for performing calculation or computer implementation in the Claim. Although the claim is deemed to be directed to the airline availability request, all the recited method steps could be carried out by human intervention, which merely requires the mental process. There is no significant recitation of a computer processor to perform all the recited steps as claimed by the applicant.

***Claim Rejections - 35 USC § 102***

6) Claims 1-4, 7-9, 14-16, 22, 25-27, 37, 43-53, 55, 58, 59, 63 and 64 are rejected under 35 U.S.C. 102(e) as being anticipated by DeMarcken et al. (WO 00/46715 A).

W.R.T. Claim 1:

DeMarcken et al. discloses a method comprising the steps of:

receiving a first request from a first requestor for airline availability information (see abstract; page 7, lines 1-28; page 9, line 19 - page 12, line 3; page 12, line 32 - page 13, line 34; page 15, line 16 - page 15, line 32; and see Figs.);

querying one or more airline availability information sources for the requested airline availability information (see Id.);

receiving the requested airline availability information from the one or more airline availability information sources (see Id.);

caching the received airline information;

    providing the received information to the requestor;

    receiving a second query from a second requestor for the information (see *Supra* Response to the argument); and

    determining to provide the second requestor with at least one of the following:  
real-time information, and cached information; and

    providing information to the requestor (e.g., see Fig. 9).

W.R.T. Claim 2: DeMarcken et al. further discloses the method including: monitoring airline availability information traffic between an airline availability information source and one or more clients of the source (see abstract; page 7, lines 1-28; page 9, line 19 - page 12, line 3; page 12, line 32 - page 13, line 34; page 15, line 16 - page 15, line 32); and caching at least a portion of the monitored airline information.

W.R.T. Claim 3: DeMarcken et al. further discloses the method including: proactively generating one or more queries independent of requestor queries;

    sending the one or more proactively generated queries to an airline availability information source and caching information returned therefrom (see *Id.*).

W.R.T. Claim 4: DeMarcken et al. further discloses the method including: monitoring airline availability information traffic between an airline availability information source and one or more clients of the source (see abstract; page 7, lines 1-28; page 9, line 19 - page 12, line 3; page 12, line 32 - page 13, line 34; page 15, line 16 - page 15, line 32); caching at least a portion of the monitored airline information; proactively generating

Art Unit: 3629

one or more queries independent of requestor queries; sending the one or more proactively generated queries to an airline availability information source and caching information returned therefrom (see *Id.*).

W.R.T. Claim 7: DeMarcken et al. further discloses the method including: proactively generating queries to populate cache (see *Supra*).

W.R.T. Claim 8: DeMarcken et al. further discloses the method including: proactively generating queries to update cached information (see *Id.*);

W.R.T. Claim 9: DeMarcken et al. further discloses the method including: ordering the proactive queries for processing based on time-to-departures and age of associated cached information (see abstract; page 7, lines 1-28; page 9, line 19 - page 12, line 3; page 12, line 32 - page 13, line 34; page 15, line 16 - page 15, line 32);

W.R.T. Claim 14: DeMarcken et al. further discloses the method including: receiving a second requestor preference for real-time information (or cached) ; and

determining to provide the second requestor with real-time information (or cached) based at least in part on the second requestor preference (see *Id.*);

W.R.T. Claim 15: DeMarcken et al. further discloses the method wherein the step of determining step is based at least in part on one or more of the following: an availability of requested information in cache; a currently cached flight availability count; a client preference for cached/ real-time data; an age of the cached information; a client ID; a time; .... (see abstract; page 7, lines 1-28; page 9, line 19 - page 12, line 3; page 12, line 32 - page 13, line 34; page 15, line 16 - page 15, line 32);

W.R.T. Claim 16: DeMarcken et al. further discloses the method including: querying one

or more information sources through one or more proxies (see *Id.*);

W.R.T. Claim 22: DeMarcken et al. further discloses the method including: receiving a first request from a first requestor for one or more of the following: hotel availability, rental car availability, taxi, entertainment, and restaurant availability (see *Id.*).

W.R.T. Claim 25: DeMarcken et al. further discloses the method including: caching recently updated information separately from less recently updated information and searching the recently updated cached information when real-time data is sought (see *Supra*).

W.R.T. Claim 26: DeMarcken et al. further discloses the method including: permitting the requestors to specify approximate departure times; and searching a cache for requested information .

W.R.T. Claim 27: DeMarcken et al. further discloses the method including: rounding-up actual departure times for each flight, providing at least the rounded-up actual departure time to a hashing function, and storing information associated with the flights in a hash table based on resulting rounded-up hash table indexes (page 7, lines 1-28; page 9, line 19 - page 12, line 3; page 12, line 32 - page 13, line 34; page 15, line 16 - page 15, line 32); rounding-down actual departure time for each flight, providing at least the rounded-down actual departure time to the hashing function, and storing information associated with the flights in the hash table based on resulting rounded-down hash table indexes;

W.R.T. Claim 37: DeMarcken et al. further discloses the method including: sending the one or more proactively generated queries periods of low information source activity (see *Id.*);

Art Unit: 3629

W.R.T. Claim 43: DeMarcken et al. further discloses the method including: assigning priority to queries according to an associated market (see Supra);

W.R.T. Claim 44: DeMarcken et al. further discloses the method including: assigning priority to queries according to a frequency of flights (see abstract; page 7, lines 1-28; page 9, line 19 - page 12, line 3; page 12, line 32 - page 13, line 34; page 15, line 16 - page 15, line 32);

W.R.T. Claim 45: DeMarcken et al. further discloses the method including: assigning priority to queries according to a frequency of changes associated with availability of corresponding flights (see Id.);

W.R.T. Claim 46: DeMarcken et al. further discloses the method including: assigning priority to queries according to a market importance (see Id.);

W.R.T. Claim 47: DeMarcken et al. further discloses the method including: assigning priority to queries according to nearness of departure time (see abstract; page 7, lines 1-28; page 9, line 19 - page 12, line 3; page 12, line 32 - page 13, line 34; page 15, line 16 - page 15, line 32);

W.R.T. Claim 48: DeMarcken et al. further discloses the method including: assigning priority to queries according to an age of cached data (see Supra);

W.R.T. Claim 49: DeMarcken et al. further discloses the method including: assigning priority to queries according to a number of remaining available seats (see Id.);

W.R.T. Claim 50: DeMarcken et al. further discloses the method including: assigning priority to queries according to anticipated increases in travel volume (see abstract; page 7, lines 1-28; page 9, line 19 - page 12, line 3; page 12, line 32 - page 13, line 34;

page 15, line 16 - page 15, line 32);

W.R.T. Claim 51: DeMarcken et al. further discloses the method including: assigning priority to queries according to a type of product/service (see Id.);

W.R.T. Claim 52: DeMarcken et al. further discloses the method including: assigning lower priority to forms of ground transportation (see Id.);

W.R.T. Claim 53: DeMarcken et al. further discloses the method including: assigning lower priority to flights that use propeller planes (see abstract; page 7, lines 1-28; page 9, line 19 - page 12, line 3; page 12, line 32 - page 13, line 34; page 15, line 16 - page 15, line 32);

W.R.T. Claim 55: DeMarcken et al. further discloses the method including: updating cached airline availability information according to multiple priorities (see Id.);

W.R.T. Claim 58: DeMarcken et al. further discloses the method including: predicting an availability status (see Id.); and

W.R.T. Claim 59: DeMarcken et al. further discloses the method including: predicting availability status based on prior observed variables, including prior availability information (page 7, lines 1-28; page 9, line 19 - page 12, line 3; page 12, line 32 - page 13, line 34; page 15, line 16 - page 15, line 32).

W.R.T. Claim 63:

DeMarcken et al. discloses the method comprising the steps of:

receiving a first request from a first requestor;

querying one or more information sources for the requested information;

receiving the requested information from the source;  
caching the received information;  
providing the information to the requestor;  
receiving the second query from a second requestor;  
determining to provide the second requestor with at least one or the  
following types of information (real-time and cached information);  
providing information to the requestor in accordance with the  
determination (see abstract; page 7, lines 1-28; page 9, line 19 - page 12, line 3; page  
12, line 32 - page 13, line 34; page 15, line 16 - page 15, line 32; see Supra Claim 1  
and response to the argument).

W.R.T. Claim 64:

DeMarcken et al. discloses a computer program product including:

a receiving function that causes the system to receive requests for  
information from requestors;

a query process function that causes the system to determine whether to  
process a query out-of-cache or with real-time information, and that causes the system  
to query one or more information sources when it determines to process a query with  
real-time information; and

a cache control function that causes the system to cache information  
returned from the sources (see abstract; page 7, lines 1-28; page 9, line 19 - page 12,  
line 3; page 12, line 32 - page 13, line 34; page 15, line 16 - page 15, line 32; see Supra

Claim 1 and response to argument).

***Claim Rejections - 35 USC § 103***

7) Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over DeMarcken et al. in view of "Using Predictive Prefetching to improve world wide web latency" (Padmanabhan V N et al.).

DeMarcken et al. discloses the invention as cited above but does not specifically disclose the method including: adding the requestor queries to a query priority queue; adding proactively generated queries to the query priority queue, at lower priorities than the requestor queries; and processing the requestor queries and the proactively generated queries according to their priorities.

Padmanabhan V N et al. teaches for a method for interfacing between a plurality of requestors and sources, including: adding the requestor queries to a query priority queue; adding proactively generated queries to the query priority queue, at lower priorities than the requestor queries; and processing the requestor queries and the proactively generated queries according to their priorities (see abstract; page 26, line 4 - page 26, line 14; page 29, line 33 - page 30, line 11; and page 34, line 18 - page 35, line 7).

It would have been obvious to include the steps of: adding the requestor queries

Art Unit: 3629


to a query priority queue; adding proactively generated queries to the query priority queue, at lower priorities than the requestor queries; and processing the requestor queries and the proactively generated queries according to their priorities, as taught by Padmanabhan V N et al., for the purpose of providing a substantial reduction in latency perceived by a requestor in terms of the average time to access a file.

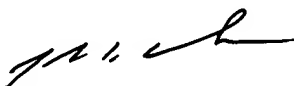
### **Conclusion**

8) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Woo whose telephone number is 703-308-7830. The examiner can normally be reached on Monday-Friday from 8:30 AM -5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Weiss can be reached on 703-308-2702. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0861.

  
Richard Woo  
Patent Examiner  
GAU 3629  
October 25, 2004

  
JOHN G. WEISS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3600